

Correlation between five radioimmunoassay systems for bovine pregnant associated glycoprotein (PAGs)



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Introduction

- Pregnancy-associated glycoproteins, also known as pregnancy-specific protein or pregnancy-serum protein 60 kDa belong to a large family of placental glycoproteins expressed in trophoblast cells in ruminant species
- They are members of the aspartic proteinase (AP) gene family, having high sequence homology with each other as well as with pepsin, chymosin, cathepsin D and E (Xie *et al.*, 1991).
- In veterinary practice, the detection of these placenta-secreted proteins in maternal peripheral blood can be used for early pregnancy diagnosis in cattle from Day 28 of gestation onwards (Zoli *et al.*, 1992)

Materials and Methods

- The experiment was carried out Holstein Friesian females (n=37) of mixed age and parity.
- Blood samples were collected in the coccygeal vein into tubes containing EDTA at Day 30, 45, 60 and 80 after AI.
- In all RIA systems, 67 kDa PAG preparation was used as tracer (according to the Chloramine T method) and as standard. Five antisera were raised in rabbits against different PAG preparations according to the technique of Vaitukaitis.
- Plasmatic PAG concentration was measured by radioimmunoassay technique with some modifications (Ayad *et al.*, 2007).

 **AIM** The present study was undertaken to describe PAG concentrations during the first trimester of pregnancy by use of homologous and heterologous RIA systems.

Results

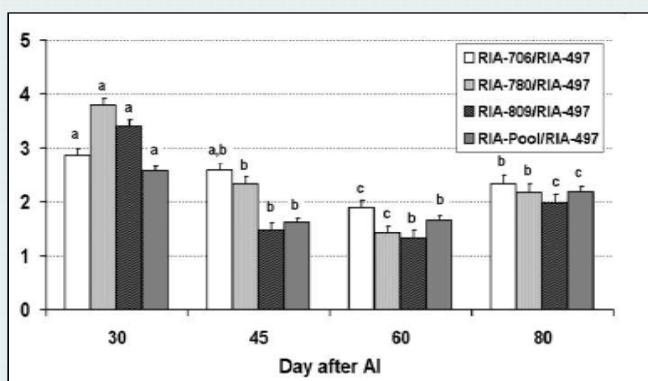


Figure: Mean (\pm SE) ratios of five PAG-RIA systems in pregnant females presenting detectable values from day 30 to 80 after AI. a,b,c Values with different superscripts at different days in a same RIA system differ statistically ($P > 0.05$).

	RIA-497	RIA-706	RIA-780	RIA-809
RIA-706	0.89**	-	-	-
RIA-780	0.81*	0.94**	-	-
RIA-809	0.82*	0.90**	0.91**	-
RIA-Pool	0.89**	0.97**	0.94**	0.94**

Table: Correlation coefficients of PAG concentrations measured in 37 pregnant Friesian Holstein females from Day 30 to 80 after AI by five RIA systems (* $P < 0.001$, ** $P < 0.0001$)

Conclusion

Our results suggest that all tested PAG-RIA are highly correlated and can be useful to follow PAG concentrations in samples collected during the first trimester of gestation.

References

- Ayad *et al.*, 2007.. Reproduction in Domestic Animals 42, 433-440.
- Xie *et al.*, 1991. Proceedings of the National Academy of Sciences of USA, 88, 10247-10251.
- Zoli *et al.*, 1992b. Biology of Reproduction 46, 83-92